

### ABSTRACT OF THE DISCLOSURE

A method for reducing interference in a wireless system, and a system for performing the method. The wireless system should include at least two, and preferably four, beam formers and a plurality of mobile units. The method includes the steps of transmitting beams B1, B2, B3 and B4 into first, second, third and fourth beam areas, respectively. At least two sub-areas are defined within each of the first, second, third and fourth beam areas based upon the degree of overlap with adjacent beam areas, whereby each of the beam areas includes at least one overlapping sub-area and at least one non-overlapping sub-area. The method further includes coding signals of the beams B1, B2, B3 and B4 for receipt by a particular mobile unit based upon which one of the sub-areas that the particular mobile unit is located within. If the invention is practiced with a TDM scheme, at least three time periods are utilized, wherein during the first time period (T1), simultaneous transmissions are made for receipt by mobile units located within sub-areas G1<sub>1</sub>, G1<sub>2</sub>, G1<sub>3</sub> and G1<sub>4</sub>; during a second time period (T2), transmissions are made for receipt by mobile units located within sub-areas G2<sub>1</sub> and G2<sub>4</sub>; and during a third time period (T3), transmissions are made for receipt by mobile units located within sub-areas G2<sub>2</sub> and G2<sub>3</sub>. If the invention is practiced with an FDM scheme, the group of frequencies assigned to each cell is divided such that half of the frequencies serve mobile units located within sub-areas G1<sub>1</sub>, G1<sub>2</sub>, G1<sub>3</sub> and G1<sub>4</sub>, and the other half of the frequencies serve mobile units located within sub-areas G2<sub>1</sub>, G2<sub>2</sub>, G2<sub>3</sub> and G2<sub>4</sub>.